

**ROBUST SUMMARY**  
**ALKYL SULFIDE CATEGORY**  
**CAS # 68511-50-2**  
**ECOTOXICITY ELEMENTS:**  
**TOXICITY TO AQUATIC INVERTEBRATES (E.G., DAPHNIA)**

<b><u>Test Substance</u></b>	
CAS #	68511-50-2
Chemical Name	1-propene, 2-methyl-, sulfurized
Remarks	This substance is also referred to as methyl propene derivative in HERTG's Test Plan for Alkyl Sulfide Category. For more information on the chemical, see Section 2.0 "Chemical Description of Alkyl Sulfide Category" in HERTG's Test Plan for Alkyl Sulfide Category.
<b><u>Method</u></b>	
Method/Guideline followed	U.S. EPA 797.1300 (1985, 1987), OECD 202 (1984)
Test Type	Static acute toxicity test
GLP (Y/N)	Yes
Year (Study Performed)	1993
Species/Strain	Daphnia magna
Test details (static, semi-static, dosing rate, flow-through rate, etc.)	A static non-renewal test was conducted using water accommodated fractions (WAF) of the test material at 100, 300 and 1,000 mg/L loading rates. WAFs were prepared by adding a measured weight of the test material to a measured volume of the dilution water and stirring for 24 hours with a magnetic stir bar. The test solutions were allowed to stand for 1 hour before the water phase (WAF) was siphoned off.
Statistical Methods	Not conducted because there was greater than 50% survival in all test vessels.
Remarks field for test conditions (fill as applicable)	<p>Test species: Juvenile daphnids, less than 24-hours old were produced from laboratory in-house culture</p> <p>Test conditions: Two 250-mL glass beakers that contained 200 ml of test solution were used per treatment. The 250-mL test vessels were loosely covered to reduce entry of dust, etc.</p> <p>Test temperature range: <math>20 \pm 1^{\circ}\text{C}</math></p> <p>Exposure vessel type:</p> <p>Dilution water: Filtered well water collected at Hampton, New Hampshire and adjusted to the appropriate hardness 168 to 172 mg/L as <math>\text{CaCO}_3</math>. The water was passed through activated carbon, a particle filter, and then an ultraviolet sterilizer and stored in a polyethylene tank where it was aerated. TOC levels were 2 mg/L at the beginning and end of the test, and 10 mg/L TSS at the beginning and &lt;10 mg/L at the end of the test.</p> <p>Lighting: A 16 hour light and 8 hour dark photoperiod was maintained</p>

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	<p>with cool-white fluorescent lights with an intensity of <math>20 \mu\text{Ein}^{-1}\text{m}^{-2}</math>.</p> <p>Water chemistry: Dissolved oxygen – 8.2 to 8.7 mg/L; pH – 7.8 to 8.2; conductivity – 570 to 640 <math>\mu\text{mhos/cm}</math>; temperature – 20.5 to 20.9°C.</p> <p>Element: Immobilization</p> <p>Test design: Control, 100, 300 &amp; 1,000 mg/L WAF loading rates. 10 daphnids per replicate (20 per treatment).</p> <p>Method of calculating mean measured concentrations: not applicable</p> <p>Exposure period: 48 hours</p> <p>Analytical monitoring: Total organic carbon (TOC) measurements of initial test solutions and control (0-hour) and at test termination (48-h). TOC levels were 2 mg/L in the control, 3 mg/L at the 100 mg/L and 300 mg/L test levels; and 4 to 5 mg/L at the 1000 mg/L test vessel. TOC levels were not considered to be indicative of actual test material concentrations and results are therefore based on nominal loading rates</p>
<b><u>Results</u></b>	<p>Nominal concentrations: 48-hour and 24-hour <math>\text{EC}_{50} = &gt;1,000 \text{ mg/L}</math> (based on nominal loading rates). 48-hour and 24-hour <math>\text{NOEC} = 1,000 \text{ mg/L}</math></p>
Remarks	<p>Measured concentration: N/A</p> <p>Unit: mg/L</p> <p><math>\text{EC}_{50}</math>, <math>\text{EL}_{50}</math>, <math>\text{LC}_0</math>, <math>\text{LL}_0</math> at 24, 48 hours: 48-hour and 24-hour <math>\text{EC}_{50} = &gt;1,000 \text{ mg/L}</math> (based on nominal loading rates). 48-hour and 24-hour <math>\text{NOEC} = 1,000 \text{ mg/L}</math></p> <p>Statistical results: not applicable</p> <ul style="list-style-type: none"> <li>• Effect concentrations based on nominal loading rates</li> <li>• No immobilization seen at the highest test concentration of 1,000 mg/L (WAF)</li> <li>• Control response was satisfactory.</li> </ul>

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<u><b>Conclusions</b></u>	The WAFs of the test material were not toxic to daphnids at the concentrations tested. Ninety-five to 100% survival occurred at all test concentrations. No sublethal effects were noted during the test.
<u><b>Data Quality</b></u>	Reliable without restrictions
<u><b>References</b></u>	Chemical Manufacturers Association, HERTG  Ward, T.J. (1993) Acute Toxicity of the Water Accommodated Fractions (WAFs) of CMA #613 to the Daphnid, <i>Daphnia magna</i> . T.R. Wilbury Study #9178-CMA/ESI-613.
<u><b>Other</b></u>	Updated: 12-21-99 This study is being submitted by the HERTG Panel of the Chemical Manufacturers Association.